Please direct any questions to the undersigned attorney.

Respectfully submitted,

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Certification under 37 CFR §§ 1.8(a) and 1.10

I hereby certify that, on the date shown below, this application/correspondence attached hereto is being:

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VERSION WITH MARKINGS TO SHOW CHANGES

1. [Currently Amended] A method of ~~using a bottom hole assembly deployed in a borehole to estimate a formation property~~ continuously specifying the mudweight to be used in a drilling operation, comprising the steps of:

(a) generating a source signal from ~~said~~ a bottom hole assembly;

(b) detecting at least one receiver signal using said bottom hole assembly;

(c) computing a frequency dependent characteristic of said at least one receiver signal; ~~and~~

(d) using said frequency dependent characteristic to estimate ~~a~~said ~~formation~~ property of a formation in the region of said bottom hole assembly; and

(e) using said frequency dependent characteristic to specify said mudweight.

B1 Cont.

2. [Currently Amended] The method of claim 2 wherein said ~~tool is a~~ bottom hole assembly ~~of a~~comprises drilling apparatus.

3. [Original] The method of claim 2 wherein said source signal is a noise spectrum generated by a drill bit of said drilling apparatus.

4. [Original] The method of claim 3 wherein said step of determining frequency dependence is carried out by cross-correlation analysis.

5. [Currently Amended] The method of claim 4 wherein ~~said at least~~ one receiver signal comprises a direct formation signal, and wherein said formation surrounds said borehole.

6. [Currently Amended] The method of claim 4 wherein ~~said at least~~ one receiver signal comprises a reflected signal, and wherein said formation is ahead of said borehole.

7. [Original] The method of claim 1 wherein said frequency dependent characteristic is amplitude attenuation.

B1

8. [Currently Amended] The method of claim 7 wherein said~~the~~ formation property is pore pressure.

9. [Original] The method of claim 8 wherein said pore pressure is estimated from a frequency dependent attenuation relationship.

10. [Original] The method of claim 1 wherein said frequency dependent characteristic is wave propagation velocity.

11. [Original] The method of claim 10 wherein said formation property is pore pressure.

12. [Canceled] ~~The method of claim 1 wherein said formation property is lithology.~~

13. [Canceled] ~~The method of claim 1 wherein said formation property is fluid content.~~

14. [Canceled] ~~The method of claim 1 wherein said formation property is rock strength.~~

15. [Canceled] ~~The method of claim 1 wherein said tool is a bottom hole assembly of a measurement while well logging system.~~

16. [Original] The method of claim 1 wherein said source signal is generated by an active source located on said bottom hole assembly.

17. [Original] The method of claim 16 wherein said step of determining frequency dependence is carried out by a frequency component analysis.

18. [Original] The method of claim 1, wherein said at least one receiver signal comprises a direct borehole signal.

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19. [Original] The method of claim 18 wherein said formation property is permeability.

20. [Currently Amended] A method of continuously estimating the pore pressures of formations ahead of a bottom hole assembly, comprising the steps of:

a) generating a source signal from said bottom hole assembly;
b) detecting at least one receiver signal using said bottom hole assembly;
c) using said source signal and said receiver signal to estimate a pore pressure of at least one said formation; and
d) repeating steps a), b), and c) as said bottom hole assembly moves sequentially downward through said formations.

21. [Currently Amended] A method of continuously monitoring the wellbore pressure safety margin corresponding to formations ahead of a bottom hole assembly, comprising the steps of:

a) generating a source signal from said bottom hole assembly;

b) detecting at least one receiver signal using said bottom hole assembly;

c) using said source signal and said receiver signal to determine a pore pressure of said formation;

d) using said pore pressure to monitor said wellbore pressure safety margin; and

e) repeating steps a), b), c) and d) as said bottom hole assembly moves sequentially downward through said formations.

B1 Bd

22. [Currently Amended] A method of continuously optimizing the weight of drilling mud used in a drilling operation, comprising the steps of:

a) generating a source signal from a bottom hole assembly;

b) detecting at least one receiver signal using said bottom hole assembly;

c) using said source signal and said receiver signal to determine a pore pressure of a formation ahead of said bottom hole assembly; and

d) using said pore pressure to specify a weight of said drilling mud which corresponds to a target wellbore pressure safety margin.